THE DIATONIC COLLECTION IN TWO NON-TONAL WORLDS

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I

INTRODUCTION

Johannes Ockeghem's chanson Fors seulement (ca. 1460) and the opening section of Igor Stravinsky's ballet Orpheus (1947): musical lines moving through the diatonic pitch-space in which references to tonal procedures are minimal.[1] Certain relations which are associated with tonality are operative, however. For example, some kind of hierarchy exists among the members of their particular diatonic collections--both musics seem to be centered around a specific pitch at their openings.[2] Furthermore, the interval selection of the particular simultaneities in the two compositions is intentional, and some of the simultaneities seem to be related in interval structure to certain simultaneities which occur in tonal pieces.

This leads us to two interrelated questions:

1) What kinds of pitch-class and interval-class priority are operative in these two compositions?[3]

2) How do the musical features of the two

compositions articulate those priorities?

What follows, then, is a discussion of the compositional deployment of the diatonic collection in two non-tonal worlds. I am trying to hear these two compositions in terms of certain pitch/time constructions that seem to demand attention by their musical character, and through the gradual accumulation of other musical details that seem to support and animate those constructions. Thus, my paths through the two compositions are, for the most part, chronological.

What emerges from the analytical combination of these two compositions, so widely separated in time, is, I hope, a sense of the various modes of musical perception and discussion that are suggested by each, despite the diatonic pitch material which they hold in common. The octave, for example, takes on two very different intervallic identities within the compositions, and thus suggests different ways of hearing octaves from one composition to the other.

These various modes of musical perception suggested by the interaction of the two compositions in turn generate different ways of discussing their particular deployments of the diatonic collection. For example, the accumulation of interrelationships among certain horizontal and vertical pitch collections in the Stravinsky tableau gives rise to a different set of analytic concerns than those suggested by the Ockeghem chanson, where individual intervallic identities are suggested by the contrapuntal activity of the voice lines.

An interesting parallel emerges from these two analyses, and is, I believe, a result of their common diatonic material. Both compositions exhibit similar modes of articulation in creating a sense of tone center, particularly through systems of registral association. What finally emerges from a view of these various modes of musical perception and discussion are, I hope, richer notions about the interaction of the whole fabric of musical details of these two compositions which seem to converge as members of a striking class of compositions that forms at the sometimes-blurred edges of tonality.

Notes

[1] Any questions about the essential nature of tonality or the underlying assumptions of the terms that we apply to tonal pieces, however fascinating, are beyond the scope of this essay. Fortunately, there is a fairly widespread consensus about which pieces from the literature of music fall within the domain of tonal pieces. Faced with similar problems in Berger (1963) the author states at one point: "Tonality, according to the restricted sense in which it is construed here, is defined by those functional relations postulated by the structure of the major scale" (Arthur Berger, "Pitch Organization in Stravinsky," Perspectives of New Music 2/1 (Fall-Winter 1963): 11). This definition seems to exclude the possibility of a composition utilizing the major scale ordering of the diatonic collection, but not falling within the domain of tonal pieces. Obviously, the major scale provides the necessary conditions for tonality, but those "functional relations" must be realized on the musical surface of a piece if it is to be tonal. Elsewhere, Berger asks the reader to to take the notion of tonality on faith--I can ask no less of the reader here.

[2] In Berger (1963) the author uses the term non-tonal centric music to describe this type of composition.

[3] The term pitch-class refers to any one of the twelve notes that comprise an octave of chromatic space (numbered 0-11 upward from C) without regard to specific registral deployment. Thus, "the pitch-class C" refers to all C's, whereas "the pitch C" would refer to a specfic occurrence of a C. Interval-class refers to any of the six pairs of intervals, minor second/major seventh, major second/minor seventh, minor third/major sixth, major third/minor sixth, perfect fourth/perfect fifth, and augmented fourth/diminished fifth (numbered 1-6 upward from the minor second/major seventh class) considered equivalent when evaluated without regard to registral deployment. The less-loaded term pitch-class priority introduced in Berger (1963) as an alternative to tone center or tonic with all of their tonal resonances, to which, by

extrapolation, I have coupled the term interval-class priority, refers to the ascendancy of one pitch-class (or interval-class) over others in specific musical contexts, interpretable in a local context, in a piece, or an entire body of pieces, depending on whatever hierarchies one might establish.

II

JOHANNES OCKEGHEM:

FORS SEULEMENT

Emerging from the opening A breves and their unelaborated reiterations is a sense of an octave cornerstone at the edge of the chanson. What kind of octave vista is unclear at this point, but the weight of these octaves suggests something more than purely acoustical support.[1] Concurrently, some sense of a referential role for these A's is suggested by the way the two lines seem to linger on their origin-pitches before proceeding. Glancing ahead, this reference might be considered a spatial one, in that the octave A span approximately defines the center of the chanson's registral compass. Some sense of A as a pitch-class falls out of the opening, primarily through the notion of these two independent lines having similar points of origin, but also through their lingerings.[2] Intertwined through these three intimations is the most immediately apparent aspect of the octave A's--their second and third soundings, a rearticulation of the initial time span through bisection--carry with them the gradually developing sense of metrical organization in the chanson.

The contratenor's C breve in measure 3 seems to have the effect of destabilizing the fourth A in the tenor, setting into motion the tenor's descent from A to E which, in its course, bisects the new semibreve attack point introduced in the preceding measure. The two minims do not constitute merely a rearticulation of that new attack point by further division--as it bisects that time span, and further partitions the original time span, it begins to partition the diatonic pitch space. It is as if the shift to the sixth simultaneity after the octave vista of the opening measures incites both an acceleration of attack rhythm--a division, and then an echo-like division of that division--and a pitch progression.

Simultaneous parallel leaps of a third in the two voices at measure 5 reilluminate the E, both by the exchange of voices, a timbral transformation, and its sudden shift in contrapuntal focus, upper voice to lower voice.[3] While the E in the tenor, coming to rest above the contratenor's C breve in measure 4, marked at least a momentary point of arrival, the contratenor's E in the next measure has a more neutral status.

The contratenor's stepwise descent from E to A in measures 5 through 7 is, is, of course, an almost literal imitation of the initial linear move of the tenor. This time, the slight alteration, with the pitch change coming early in the pattern of imitation, restores the A with which the line began and completes a scalar partition of the pitch space between the opening A breves. So it is beginning to look as though the chanson and "a piece in C major" share a common referential collection, namely the diatonic collection, the chanson is characterized by a different referential ordering of intervals.[4]

Its downbeat metric placement ensured by the variation in this imitation, the contratenor's arrival on A turns out to be only a momentary stopping-off place--imbued with more potential energy after its initial leaps which span a fifth, the contratenor's downward momentum seems to carry it through the A and on to D, tipping us off only at the last moment as to the goal of the phrase.

With the focus shifted to the contratenor the tenor's reconsideration of the G and F that it originally touched upon suggests that its initial descent was premature. Up to the cadence at measure 10, the tenor's trajectory looks like a linear descent from A to D. The initial string from A to E, a linear articulation of the two leaps, A-C and C-E, occurring simultaneously in the contratenor, seems, by the time of the cadence, something else--a quick descent, almost to D, and then a much slower and more complex descent from G to D.

This same linear descent from A to D is, of course, presented explicitly in the final moves of the contratenor, possibly as a foil to the elaborated version in the tenor. Its strategic placement near the end of the line, beneath the suspensions in the tenor, tips the balance of the entire phrase toward the octave D's. In the midst of its metrical phase reversal the tenor's adumbration of its point of final arrival, an anticipation of D in the E-D suspension, is also strategically placed, coming on an attack point as yet unessayed.

The octave D's which punctuate the end of the first phrase at measure 10 are particularly resonant in light of the opening octave A's of the chanson. It seems that the musica ficta here is an important sign preceding these octave D's--they seem to be sensitive harmonically and the chromatic intrusion (C#) brings them further into relief. The carefully handled voice-leading--a major sixth expanding in contrary motion to the octave--coupled with the the octave D's conspicuous metric role at the close of the phrase suggests that the octave as a representative of "interval-class 0," an interval-class sometimes regarded in tonal/post tonal contexts as discountable, be given at least equal status with regard to the other classes.[5]

The A in the contratenor at measure 7 which seems a momentary point of arrival, in addition to its obvious registral association, is notable in that it is marked by a sixth simultaneity which gives way to a fifth on the second semibreve of the measure. The sixth seems a bit unstable here, just as it did in measure 3 where, in an identical metric situation, the sixth also closed inward to a fifth. The entry of the superius on A, creating a fifth above the octave D's, seems to confirm the sense of the priority of the interval by their vertical conjunction on the downbeat of measure 10.

With the entry of the superius comes another confirmation. The careful handling of the A in the contratenor in measure 7 and the echo of the tenor's A with the entry of the superius in measure 10 make the sense of A as a priority pitch-class seem reasonably solid.[6]

Using the notions of rearticulation, anticipation, delay, neighbor motion, and passing tone connection it might possible to get a more detailed picture of the entire first phrase by focusing on the progression of simultaneities formed by the interplay of the two lines, and in some cases taking in certain parts of the musical surface as articulations or elaborations of a more simple structure.[7] For example, it is possible understand the second measure of the chanson as presupposing a single pair of A breves like those of the first measure: we can understand the second attack point of the measure in terms of the first, that is, cutting the opening time-shape in half. In this sense then, each pair of semibreves is a rearticulated breve.

Conversely, the time span covered by the tied C breves of the contratenor in measures 3 and 4, the second breve being unarticulated, can be understood in terms of the composite rhythm of the two voices. The tenor's E on the downbeat of measure 4 falls on the same attack point where the second C breve would have sounded were it not tied to the preceding one.

The G and F minims forming a step motion between A and E require two steps in reconstruction. There is a slight difference in function between the G and F due to their respective metric locations. The G is in a more structurally sensitive location since it divides the metric unit in half, echoing the move of the second octave A semibreves in the preceding measure. Therefore, we might first rewrite the measure to A and G semibreves and then understand the F as a passing tone between G and E. Thus, the secondary beat is metrically rearticulated by division, in the same manner as the opening breve was rearticulated in measure 2, but this time coupled with movement in the pitch space, a kind of intervallic articulation.

If we were to rewrite both voices in measure 3 again, this time as breves, which of the two pitches of the tenor would be written out? One one hand, the A-ness of the first two measures might argue for an A breve. On the other hand, the sense of contrary pitch motion, explicit on the musical surface, would be retained if we rewrite the tenor here as a G breve. Nor would there be any pitch-class duplication between measures 2 and 3.

Measure 6 provides an even more complex interaction of pitch and time in that both voices are simultaneously involved in two different elaborations. The F-D leap in the tenor, which we can understand as F and D semibreves with the D slighly delayed, comes above a C-B step motion between D and A in the contratenor. The B-D simultaneity on the final minim of the measure suggests that the contratenor line might be rewritten as D-B semibreves with the C as an accented passing tone. This passing tone, coming at a more sensitive attack point in the rhythmic/metric organization, seems to carry more weight than the passing tone encountered previously in the tenor.

At this level the two lines can be rendered as downward parallel leaps of thirds, but on the musical surface the juxtaposition is a crucial one for the combined lines delay the B (B-flat)-D simultaneity, placing it closer the A-E simultaneity in measure 7. Note that the leap back to F in the tenor is but another delay tactic in that it slightly disturbs the contrary-motion resolution of the B (B-flat)-D third to the A-E fifth. This disturbance can be construed as a move to mitigate the cadential quality of such an interval succession--especially if we take it in with the chromatic alteration--by placing the resolution in weaker metric position.

For our purposes, the suspensions in measures 8-10 can be taken as special types of delay structures whose primary characteristics would be a delay over the boundary of a metric unit followed by a downward stepwise resolution on the secondary beat of the next unit. This elision of suspensions figures prominently in setting up the cadence of the first phrase since it sets the two voices out of phase with each other metrically, bringing into relief the point at which the lines are reconciled--the octave D's at measure 10.

If the delay structure were realigned in measure 8 it would reveal what would sound to tonal ears as a curious parallelism, but what is important here is the interval question. What kind of priority should we give the G-D relative to A-E? The musical surface seems to hold the answer. Of course, we tend to give conceptual priority to the downbeat of a metric unit over the other attack points, and given this particular metric organization the second semibreve would be taken as some kind of secondary downbeat. In this case the out-of-phase tenor seems to require that we momentarily shift our sense of downbeat to the secondary beat through the early resolution of the suspension, a move which bisects the primary attack point for the first time, momentarily forming the interval of a fifth, but, more importantly, directing our attention to the secondary beat. Thus the surface seems to imply that it is the F-D simultaneity that should be given priority, with the G as a lingering accented passing tone.[8] Note the way in which the suspensions give way to the clearly articulated contrary motion to the octave D's, restoring the metric phase and bringing the phrase to a close.

Looking back over the phrase we find four occurrences of what seem to be priority intervals, the fifth and octave. Their obvious positions in the phrase notwithstanding, we might group together the octave A's that open the chanson and the final octave D's as the most prominent occurrences through the sheer insistance of the A's and the unobscured voice leading to the D's. In a slightly less prominent position would be the A-E fifth in measure 7, the voice leading being somewhat obscured by the leap back to F in the tenor. Finally, we might group together the fifths C-G and G-D from measures 3 and 8, respectively, as the least prominent, the former created in the course of a step motion and the latter within an anticipated resolution of a suspension. Thus, we gradually come to see that the simultaneities are not formed haphazardly by the play of the lines, but are carefully controlled by each line. The gradual accumulation of musical details in turn suggests different levels of conceptual priority among those simultaneities.

The intersection of the pitch-class A with two of the more prominent occurrences of the priority intervals seems a pointer toward A as a priority pitch-class. The octave D's at the close of the phrase would, by the same intersection, seem to suggest D as a priority pitch-class as well. Thus, the relation between these two pitch-classes in the course of the rest of the chanson will be crucial one.

With the fifth as a fairly well established priority interval it might be interesting to examine it in light of the interval-class of which it is a representative. Again looking back over the first phrase we find two occurrences of the fourth, the other representative of interval-class 5, as a simultaneity between the contratenor and tenor. In the first case it falls on the last minim attack point in measure 3 in the tenor. Given my previous reduction of this measure the F has the role of a passing tone, a role deduced through its metric placement and pitch trajectory. The other occurrence of a fourth simultaneity is as an accented passing tone on the second semibreve attack point in measure 6 in the contratenor. My reduction argued for understanding the measure as simultaneous leaps of a third by the two lines which were themselves a third apart, placing the C in the role of a connector between the D and B of the contratenor line. Based on these two situations it would seem that although the fourth and fifth are members of the same interval-class, they require different conceptual priorities on the musical surface of the chanson.

The entry of the superius at measure 10 forms the first three-voice simultaneity in the chanson, and after establishing its registral association with the initial A in the tenor, continues with a literal imitation of the first four measures of the tenor line. The cadence itself is rather elusive due to the contratenor's rapid descent to A through the two semiminims, another new division of an attack point, the momentary disappearance of the tenor in measure 11, and the conspicuous entry of the superius on the downbeat of the very measure which contains the payoff for the first phrase. The overall effect is that measure 10 acts as both the end of the first phrase and the beginning of the second.

As if to leave no doubt as to pitch-class priority, the tenor's disappearance leaves in its wake one of the registrally sensitive origin-A's, now supported by a new low A. As the superius proceeds, echoing the opening move of the tenor, its most striking aspect is the way the imitation is recast in a much more dissonant light by the reappearance of the tenor, a quasi-imitation beginning on F. The interplay of the tenor and superius during these measures causes F-G, E-F, and D-E to collide one after another, a move which might be seen as an overt attempt to exploit the pitch-class adjacencies of the diatonic collection as represented by this particular referential ordering[9].

Although the overall length of the second phrase is one measure shorter than the first phrase there is an approximate metric correspondence between the octave D's at measure 16 and the A-E fifth in measure 7, both of which seem to be secondary targets of the two phrases. In each case the arrival of the lines at this point seems to trigger a relatively complex contrapuntal move, a suspension in the first phrase and a syncopation in the second phrase. These two contrapuntal complexities in turn generate the momentum required to reach the final destination of the phrases.

The octave D's at measure 16 are approached by the same E-C (C#) dyad that signaled the octave D's at the preceding cadence. As with the previous octave D's these too are somewhat undone, this time even more quickly by the syncopated third leap in the tenor.

The cadence of the second phrase at measure 18 is yet further evidence of a tendency on the composer's part to treat the pitch-class A with care. This move suggests an elision between the second and third phrases by delaying the arrival of the superius. The delay itself brings the upper origin-A into relief, and as an instigator of the third phrase makes this the third time that this origin-A has played such a role.

So far, the pitch-class/interval story is developing such that both A and D are clearly priority pitch-classes with respect to the linear activity of the chanson, and both have been representatives of the octave interval, clearly a priority-interval given its contrapuntal treatment. However, when represented by the pitch-class D, the octave interval is in both cases mitigated by consequent linear activity. On the other hand, the delayed resolution of the superius at measure 18 focuses attention on the octave interval as represented by A by delaying the resolution of the preceding dyad and thereby sensitizing its point of arrival. Thus, the strong intersection of the pitch-class A with the octave interval further strengthens its primary position in the chanson, while the musical qualifications of the pitch-class D, as a representative of the octave interval, suggest some kind of secondary priority.

The three-voice structures at measures 10 and 18 are similar in several respects. Both involve a sixth-to-octave progression to which is added a perfect fifth, first above the octave and then below. Both are characterized by an appearance of the registrally sensitive upper origin-A after a silence, the first time as the opening move of the superius, and the second after the interrupted superius line at the cadence in measure 18. The A story is certainly well underway and the gradually developing D counterplot is, at the second cadence, further emphasized by an appearance of the low D from the first phrase. Further registral resonance is present through the the D-A outer-voice dyad which they hold in common.

The third phrase, characterized by more three-voice simultaneities, can be viewed as a further refinement of the gradually developing storylines. The return at measure 23 of the same octave D's from measure 16, once again approached by the E-C dyad, is somewhat upstaged by the rising line in the contratenor as it connects the low A to D, something of a retrograde of the initial contratenor move of this phrase.

In measure 20 the contratenor's low A is sounded in conjunction with C and E, forming the first three-voice simultaneity on a primary attack point without pitch-class duplication. The formation of such a triadic structure is not, in and of itself, remarkable[10]. What is striking, though, is that the structure seems to be a result of the avoidance of the octave-plus-fifth structure in a downbeat metric position, an association which seems to be reserved for phrase boundaries.

There is a similar point back in the first phrase at measures 6 and 7 where a B-D dyad expands outward by contrary motion to an A-E fifth. Most obvious is the B (B-flat)-D dyad, in register, which precedes each structure, and the delay of its resolution to the perfect-fifth A-E. At measure 19, with the addition of the contratenor, we find the delay of the resolution of the dyad in the two upper voices simultaneously cast with another B (B-flat) at the octave below. The delay itself, this time the B (B-flat)-member of the dyad, produces an identical metrical situation, with the dyad formed at the fourth minim attack point of a metric unit and its eventual resolution delayed until second semibreve attack point of the next measure. The delay, placing the octave-plus-fifth structure on this less metrically sensitive attack point, and the oblique motion forming the structure suggests a lower priority than the identical intervallic structures at measures 10 and 18.

The A-C-E trichord appears again at measure 22, and again at measure 23 where it approaches another new trichord (D-A-F) at measure 24 built on the low D, a pitch which has figured prominently in the chanson. In measure 25 the octave F's are formed by oblique motion, a tip-off that they might not carry as much weight as the octave D's in measure 23. This is the second occurrence of these octave D's, yet again approached by the same E-C dyad. The octave F's are not fortuitous, however. The F in the superius, the highest pitch both in the phrase and the entire piece, seems to be coupled at the octave as a means of further support, given its sudden prominence as the contratenor drops out of the texture at measure 25.

The oblique motion to the G-D fifth in measure 26 might be seen as a move calculated so as to not distract attention from the contrary motion to the octave A's in the next measure. Once again, conceptual priorities are determined by compositional strategies. The approach to the crucial octave A's in measure 27 is by contrary motion from the tenth, possibly an adumbration of the closing move of the phrase at measure 30, from a C (C#)-E third to unison D's. The C (C#)-E dyad itself has, of course, been set up earlier in the phrase, most notably as a part of the first consonant trichord of the piece at measure 20.

In the course of the chanson it has seemed necessary to construe the octave as a special interval when compared with the other intervals. The cadence at measure 30, where the contratenor and tenor close together on unison D's, seems a development of this notion. Given the status of the cadence simultaneity and its predilection for the octave or octave-plus-fifth structure, the unison here suggests that the interval will maintain its priority status under inversion, something not operative in the case of the perfect fifth. This would suggest that we can expand the notion to consider interval-class 0 as a priority interval-class.

The move at the mid-point of measure 30, a trichord in juxtaposition to the unison D's formed on the downbeat, creates a kind of registral delimiter between the phrases which which is uncharacteristic of the chanson. The C in the superius, picking up after a silence from the tied C breves in measures 27 and 28, seems to gravitate back toward the high F it reached in the preceding phrase, before descending and finally settling on the upper origin-A at measure 39. The length of the A, equal to three breves, may be taken as the premature end of the phrase, waiting there while the other voices catch up, and, at the same time, and reasserting its pitch-class and registral associations.

That trichord at measure 32, supporting the high F, is identical to the trichord formed beneath its original occurrence at measure 24. This trichord's close proximity to the A-C-E trichord in measure 33 and their connection by the parallel outer-voice motion, passing through another voicing of the A-C-E trichord at the mid-point of measure 32, seems to define itself in relation to the A-C-E trichord. The delay caused by the tenor as it descends to the E semibreve at the mid-point of measure 33 seems to bring the second A-C-E trichord further in relief. The G accented passing-tone, produced here by the familiar descending string from A to E, seems an octave-echo of the contratenor's move at measure 31 where it leaped downward from the unison D's, also creating a G passing tone on a downbeat.

The A-C-E trichord is immediately re-voiced at measure 34 and is identical to the trichord which so strikingly opened the phrase. This new sounding of the phrase-opening trichord is also characterized by a registral shift which seems to juxtapose it with the texture up through measure 33. The trichord appears again on the second semibreve in measure 36 in yet another voicing, this time approached by a B(B-flat)-D-F trichord. The outer-voice B(B-flat)-D dyad which moves in contrary motion to an A-E dyad recalls the similar occurrences in measures 6-7 and 19-20. This time, however, the widely-spaced dyad supports an interior line.

The contratenor's move to F at measure 39, coinciding with the attack point of the three tied A breves recasts the A for a moment and then seems to set into motion the chain of parallel tenths which finally completes the phrase in the middle of measure 41.

After the momentary F-A dyad at measure 39 the tenor quickly refocuses on a D and, at the same time, recalls the superius' two successive third-leaps through measure 18 and 19. Perhaps both of these moves are retrograde echoes of the contratenor's two upward leaps of a third at the opening of the chanson.

Given the metric placement of the cadence at measure 41 and the sudden registral shift of the lines in measure 42, the phrase boundary seems to be strongly delimited, as it was in the previous phrase. Measures 42 through 47 comprise the shortest phrase in the chanson, a phrase which culminates in a most striking move to an F region. Beginning the phrase are, once again, the origin-A's of the chanson, brought into relief by the absence of the superius. The registral shift caused by the octave leap in the contratenor seems to be set up by its octave leap in measures 33-34 in which a similar textural shift occurred.

Certainly, the motion to an F priority has been adumbrated by the contratenor's move from E to F in measures 38 and 39, unexpected in light of its previous motion down to D at measures 10 and 32. Another distinctive feature of this motion to an F area is the group of four semiminims in the tenor which set up the G-E sixth at the cadence, this being the only occurrence of a succession of more than two semiminims in the chanson.

The cadence at measure 47 is elided with the beginning of the next phrase, just as it was at the conclusion of the first phrase of the chanson, by the appearance of the superius. Note that the superius' C has been set up by the tenor at measure 45, the C being touched upon in the course of a syncopation, a rhythmic move used only once before in measure 16.

The entire phrase is all the more conspicuous by the superius' absence, which recalls the two-voice texture with which the piece began. The F priority should probably be considered as a sub-priority below D since the move itself can be thought of as some kind of substitute for the D area which has been occurring consistently throughout the chanson.

The move to F in the preceding phrase is responsible for the notated flat in the B-flat-D dyad which opens the next one. As in the preceding phrase the motion is toward an F region set up by the same E-G dyad, upside down this time. This same dyad appears, in register, as part of the trichord on the second semibreve of measure 52. Given this trichord and its resolution in measure 53 the original surprise move to F in measure 38, coming from the same E-G-B trichord, now seems even more resonant.

The simultaneity at the cadence at measure 55 is identical the one at the preceding cadence with the same high C entering, as before, after a silence. The delayed resolution in the contratenor here acts as an elision of the two phrases, and, by the sheer length of its three tied F's, keeps the F area around a bit longer.

Opening the final phrase is a very interesting move by the superius, two successive third-leaps passing through C, A and F. These triadic leaps, begun by the contratenor at the beginning of the chanson passing through A, C and E, and followed by the superius and tenor each passing through A, F, and D might be considered as elaborations of the perfect fifths which comprise the three major areas articulated by the chanson rather than viewing them, along with the vertical occurrences of triads, as nascent tonal structures.

The final phrase is characterized by reappearances of some earlier material. Following the move away from the F area, caused by the three tied F's in the contratenor, is an A-C-E trichord at measure 58. This trichord appeared in an identical registral deployment, as the first three-voice simultaneity in the chanson without pitch-class duplication, at measure 20.

After two restatements of the low A the countertenor's move to the three tied D breves seems to recall the secondary priority of D in the chanson after the two brief phrases centered around F. The C (C#)-E dyad which eventually moves to the unison D's at measure 61 recalls the cadence at measure 30 and seems to adumbrate the syncopated figure at measure 67 which momentarily causes the three D's, which have figured prominently in the pitch-class/registral counterplot, to sound together.

The occurrences of a new C-E-G trichord on the second semibreve attack point of measure 65 and the downbeat of measure 66 seem to be associated with the contratenor's A-C-E adjacent third leaps in measures 64-66. This octave reiteration of its opening move of the chanson is an allusion to the gradual renewal of A priority, though it is somewhat masked by the reharmonization. The reharmonization might be taken as a move designed so as to not tip the hand before the upcoming closing cadence. This cadence is the most overt move to A in the chanson. The simultaneity on the fourth minim attack point of the penultimate measure is a E-G (G#)-B trichord, the striking thing being not any triadic resemblance (see note [10]), but the sense of of three distinct pitch-classes suddenly closing on just one pitch-class, that one pitch-class being the most important in the entire composition.

The final cadence simultaneity, comprising the three A's which form the primary pitch-class/registral structure of the entire chanson, is most certainly a striking conclusion to this story.[11]

Notes

[1] In light of what Tinctoris and other theorists of the time say, one can infer certain things about these octaves, but this is exactly the kind of path through the chanson that I wish to avoid. Rather than invoking generalized notions of "what we know about the music of this century" it might be more interesting to look to the details on the musical surface surface such as voice leading/and or vocal registration as elements which might be conspiring to bring about notions of pitch and interval-class identity within the chanson.

[2] See note [3] in chapter I for a definition of the term pitch-class.

[3] This chanson is represented in six manuscript sources, two of which, Dijon and Washington, are identical. See Picker (1981) for details concerning the sources. The descent from the surface of the chanson will be charted on the Dijon manuscript, with one exception--I have emended the E-flat which shows up in the contratenor in measure 5 to E-natural to come into line with the other four sources since this is only major discrepancy between the Dijon/Washington manuscripts and the others.

[4] I have avoided invoking the term aeolian mode here and have instead used the terms referential collection and referential ordering of intervals, also introduced in Berger (1963), for clarity as well as to avoid conventional associations with the notion of "modality." In this particular case the referential collection is the unordered "white-note" collection, while the referential ordering of intervals (hereafter shortened to "referential ordering") refers to the referential collection in its scalewise deployment from A to A. With regard to the modal question, Berger writes: "It might have occurred to some readers that this discussion could benefit from the paraphernalia of 'modality,' which would seem so very appropriate for the identification of the different interval-orderings within the white-note collection. But quite apart from the multifarious confusions with which this notion is

laden, it does not really apply here. To claim that the finale of Dumbarton Oaks is 'Phrygian' discloses nothing of the peculiar symbiotic relationship between scales with common referential collection but different interval orderings" (Arthur Berger, "Pitch Organization in Stravinsky," Perspectives of New Music 2/1 (Fall-Winter 1963): 17). I would submit that Berger's observation is applicable even to the Ockeghem chanson, at least as we are attempting to view it. In addition, this terminology will be common to both pieces and will not, therefore, load the analyses. With regard to the notion of A priority in this piece, note that " a piece in A minor" is characterized by the same referential ordering of intervals. While this is certainly the case at least part of the time in tonal pieces, one finds that the ordering will be altered at crucial places (e.g., cadences) to come into line with "major scale" interval ordering. In the case of this chanson the musica ficta alterations are of a different nature (e.g. B-flats in measure 17).

[5] This special consideration of the octave renders the notion of interval content virtually useless in this context. The term interval content refers to the number of occurrences of each of the six interval-classes among all the pitch-class pairs of a particular collection (notated as a six-register arrangement, with the leftmost register displaying the number of occurrences of interval-class 1, the next register displaying the number of occurrences of interval-class 2, etc.). Obviously, a tabulation of the frequency distribution of the unison/octave interval class among the pitch-class pairs of a particular collection would be meaningless since this number would be identical for every collection of the same size.

[6] See note [3] in chapter I for a definition of the term pitch-class priority.

[7] For a complete discussion of these elaborations see Westergaard (1975).

[8] There is an interesting connection between the rewriting here and one of the manuscript sources.

The final version of my rewritten contratenor would be an F breve for the entire measure. In the Rome manuscript the contratenor moves directly from the A breve in measure 7 to an F breve at measure 8.

[9] In the Rome, Wolfenbuttel, St. Gall, and Paris manuscripts the superius' rhythm is identical to that of the tenor in measure 12 and the D minim is omitted in the following measure.

[10] In Randel (1971) the author observes that the 0,3,7 collection in its various guises, major and minor triads and their inversions, is the only consonant distinct three-element collection that can be generated from the addition of a contratenor to the already independant discant-tenor pair given the notions of consonance and dissonance and procedures of voice-leading that were operative at this time. For a discussion of those principles of consonance and dissonance and procedures of voice-leading see Crocker (1962). Crocker points out that these principles, as formulated in the thirteenth century, remain virtually unchanged through the Renaissance, the primary change being the eventual dissonant status of the perfect fourth simultaneity occurring between the lowest sounding voice and one of the upper voices.

[11] In Randel (1971) the author demonstrates four basic three-voice cadences that can be generated within the notions of consonance and dissonance and the voice-leading procedures operative at this time. One of them requires a leap of a perfect fourth in the lowest voice, another, a leap of a perfect fifth in the lowest voice, hence their "V-I" appearance. As in the case of triads in this music these tonal-looking cadences that sometimes fall out of the interplay of the lines are a result of voice-leading constraints imposed by a particular contrapuntal situation, not the gutteral sounds of tonal primitives.

III

IGOR STRAVINSKY:

ORPHEUS

Opening Section

At the opening, the violas hold on to the E, struck in unison with the harp, while the harp continues downward, beginning to slice up the pitch-space diatonically. The harp's first leap is back to its point of origin, followed immediately by another leap to A, only to continue its stepwise descent at the point where it left off. This downward scalar gesture, subdivided by the B-E-A leaps, seems a first intimation of a metric scheme for the opening section. Contributing to this first metric subdivision are the identical four-element collections (0,1,3,5) which are formed by these harp moves.[1]

The violas' initial gesture of picking off the harp's E, along with the harp's subsequent return to its starting place, begins to bring the pitch into relief, though at this point its role is still unclear. One quarter-note before the harp reaches the E an octave below the original pitch the violas move to anticipate its arrival, causing the new E and the F a minor second above to collide for a moment. This disturbance around the low E might be taken as a first step toward a sense of E as a pitch-class, by temporarily focusing attention away from the original representative of that pitch-class to a different one.[2]

The harp's leap back to the origin-E immediately following the minor second to unison resolution, and subsequent return to it after the stepwise descent in measure 2, further advances the notion of E as a priority pitch-class.[3] At the same time the harp moves begin to define these particular octave E's registrally, as well as the diatonic collection contained between them. In retrospect, the violas' octave leap might look like a foreshadowing of, or a first step toward, the registral area which is gradually taking shape around the harp line.

What about the tonal implications of the opening?[4] It would seem that tonal ears are faced with certain ambiguities here. On one hand the diatonic collection fixed by the harp between the octave E's, along with the violas' delineation of those same E's, suggests some kind of E-ness but the F-natural makes the "piece in E minor" inference unlikely. On the other hand the harp line alone could imply a "piece in A minor," but its implications are obscured both by its scalar deployment around E and by the violas' moves, especially the F-natural/E collision which suggests E as a possibly centric pitch-class.

The second measure is somewhat ambiguous with regard to the metric sense intimated in the initial measure. The E to E octave leap by the harp offsets the first four-note scalar segment from its original position. We are then confronted with a perfectly stepwise passage without the distinguishing B-E-A leaps. However, the absence of those B-E-A leaps does put the last three notes of the second four-note segment back in their original metric position.

The harp's scalewise descent in measure 2 from the origin-E is colored by two new string entrances which, along with the preceding octave leap by the violas, tend to foster metric ambiguity. Essaying a B the second violins anticipate by two quarter-notes the harp's arrival on the same pitch. Although we do not know quite what to make of role of B it does appear that the move is an echo of the violas' anticipation of the harp's low E, this time exploiting the other minor second generated by this particular referential ordering of the diatonic collection.[5] The B-C dyad seems to be given a secondary relation to the E-F dyad since the previous situation involved the harp and violas landing on an E-F minor second. The effect here is somewhat diminished by the initial minor third which gives way to the minor second, and then unison B's. However, the anticipation of the harp's B and its subsequent resolution do have the effect of making a subtle articulation of the mid-point of the metric unit, as if to rekindle the bisection set up by the more conspicuous harp leaps in the preceding measure.

Coinciding with the harp's arrival on A in measure 2 is an A played by the cellos an octave below the harp's A, the first activity outside of the E to E pitch-space as defined by the harp and violas, and adhered to by the second violins. The unison coupling has been a contributing factor in the intimation of E as an important pitch-class, and the octave coupling here is a result of the same kind of skimming operation in which the violas and second violins were engaged. This move, with another A represented, seems to suggest a more important status for A as a pitch-class than that of the origin-E.[6]

In creating a registral stir the A also clarifies the previous move by the second violins--the B and the A are grouped symmetrically around the E which has been sounding throughout the measure. Besides the intervallic dimension some further sense of symmetry is present due to their identical piano dynamic markings and up-bow articulations. The three pitches might also be taken as a gradually accumulated vertical echo of the harp's B-E-A leaps in measure 1.

Taken by itself, this A which is low and outside, though it points back, through the B of the second violins, to E as a priority pitch-class, seems to be claiming, by its registral deployment, some kind of priority of its own. Given the ambiguities of the harp line we might take this move by the cellos as something of a foil to the violas' initial gesture which isolated the pitch-class E from the texture. Since the registral position of the A makes it unique the cellos' move seems to only increase the sense of ambiguity.

Along with the harp's verbatim repetition in measure 3 of its opening move comes a tutti chord in the strings. This string chord, coinciding with the first note of the new harp cycle, creates the impression of a first real downbeat in the opening section. The downbeat tends to clear up, in retrospect, some of the metric ambiguity of the second measure created by the combination of the harp line and the string attacks coming three quarter-notes apart.

What kind of pitch sense can we make of the tutti string chord in relation to the harp line? The second violins and cellos restrike the B and A that they had essayed rather tentatively in the preceding measure, still grouped around the violas' E, and are joined by the first violins on the origin-E and, strikingly, by the contrabasses on a G which, continuing the baseball metaphor, is in the dirt. While the first violins' E carries with it the obvious pitch-class and registral associations the G in the contrabasses is virtually undefined in relation to the E to E pitch-space or the gradually developing possibilities of E and A as priority pitch-classes.

The deployment of the entire chord (0,2,4,7) on the musical surface in light of its interval content (021120) is quite interesting.[7] The three entrances in the strings prior to the *tutti* chord at measure 3 set up the two vertically adjacent fifths, conspicuous both as harbingers of the chord to come, and as a symmetrical structure. This deployment of the collection brings into relief interval-class 5 by exploiting the two possible occurrences of this interval in the collection. Thus, it might be possible to consider these moves as pointing toward the fifth as a priority interval.

Instead of leaping to the origin-E at measure 4, as we might expect, the harp leaps only up to D and subsequently repeats its opening figure yet again. Clearly, this move preserves the identity of the B-E-A leaps as articulations of the mid-point of the metric unit, and, by placing two occurrences of the opening scalar gesture side by side, seems to reinforce the sense of downbeat created by the string chord in the preceding measure. By the time the scalar gesture is repeated for a third time in the next measure there is little doubt as to the metric identity of the opening section.

With the harp's arrival on B in measure 4 comes a second tutti string chord, but this new chord is, in fact, the same 0,2,4,7 collection as the preceding chord. A more immediate connection between these two chords is the way in which the E-G dyad formed by the outer voices has been preserved in the inversion/transposition operation and forms the outer voices of the new chord, this time flipped upside down. The exchange now places the pitch G above the E to E pitch-space. Once again its relation is undefined with respect to the pitch-space or the developing pitch and interval-class priorities. Thus G, as a pitch-class, maintains its ambiguous position within the opening section.

While the E-D dyad on the bottom of the chord is also outside the E to E pitch-space it might be thought of as some kind of octave-echo of the E to D leap by the harp at the beginning of the measure. This seventh is, in fact part of two vertically adjacent sevenths formed by the violas, cellos, and contrabasses. Looking again at the interval content of the chord (021120) it is apparent that this deployment of the collection emphasizes the two occurrences of interval-class 2. This would tend to make those vertically adjacent fifths which occurred in the original 0,2,4,7 collection appreciate in priority-interval value, and simultaneously give cause for considering this new chord as a pointer toward the seventh as some kind of priority interval.

The linear activity of the strings in measure 5, generated in each instrument by the dyad formed between the two 0,2,4,7 collections, is characterized by segments of the harp's referential ordering (E to E) of the collection which unfold in carefully defined registers. The cellos are the exception, stuck, as it were, on their A-D dyad. The first violins articulate the lower half of the harp's persistent 0,1,3,5 partitioning of the referential ordering, E-F-G-A, first setting up E-G dyad, and then illuminating a third span F-G-A. Interlocking with the first violins at the origin-E, the second violins, after presenting a B-D dyad, unfold the upper 0,1,3,5 harp collection, B-C-D-E, pulling out the third span C-D-E. The violas interlock with the second violins at middle C, moving on to a line made up of adjacent fourths, D-G-C, after their initial E-C dyad. Mirroring the first violins, the contrabasses set up a low E-G dyad, and then unfold a mid-section of the harp collection D-E-F-G.

The violas' line in measures 4 and 5 is a linearization of the second 0,2,4,7 string chord which appeared midway through measure 4. This linearization creates another surface resonance between the two 0,2,4,7 collections through interval-class, possibly some kind of analog to the pitch-class resonance created by the E-G outer-voice dyad common to both deployments of the collection. In the vertical representation of the original 0,2,4,7 collection the two possible occurrences of interval-class 5 were deployed as adjacent fifths. The violas' representation deploys those two occurrences as linearly adjacent fourths, the other member of that interval-class.[9]

The 3-element chord on the second quarter-note in measure 5 has something of a passing chord status due primarily to the drop in number of pitch-classes represented and certain pitch/register connections to the two 0,2,4,7 collections. This is most obvious in the two uppermost voices played by the first and second violins. The B-E and D-G fourths of the 0,2,4,7 collections are connected linearly by the C-F dyad. The second violins' C anticipates the C which is struck by the violas as they begin their descending fourth line. The D in the cellos, joined momentarily by the violas, is held as a common tone while the low D, played by the contrabasses, might be considered a stepwise approach note to the 0,2,4,7 sonority formed on the fourth quarter-note attack point.

On the other hand, the sonority immediately after the 0,2,4,7 collection seems to result from some of the lines overshooting that collection. This is apparent in the first and second violins as they continue their lines upward in parallel fourths.

Likewise, the contrabasses overshoot the 0,2,4,7 chord but quickly return to E by a rare subdivision of the quarter-note pulse. The D maintained by the cellos seems to keep the 0,2,4,7 collection from drifting too far.

In measure 7 the trichords that were articulated by the first violins, second violins, and contrabasses in measure 5, become generators of new four-element collections, with each new collection being formed on the last quarter-note of that measure. The first violins succeed in pushing upward a bit from the harp's pitch-space to a B. Landing on an F at the end the measure the second violins create another transposition of the 0,1,3,5 collection, while the violas repeat their line of adjacent fourths landing on a B an octave below the first violins. Previously stuck on an A-D dyad the cellos join the contrabasses on the D-E-F trichord. These new collections, however enigmatic, are overshadowed by the final vertical sonority conatining the C# bomb dropped by the cellos, the first chromatic intrusion into an otherwise perfectly diatonic landscape.

The vertical collection containing the C# is, in itself, enigmatic but it is preceded by several simultaneities with less obscure connections. Measure 7 opens with that 0,2,5 passing chord, and the 0,1,3,5 collection formed on the fourth quarter-note is that of the opening harp figure, as well as the first violins' line in measures 4 and 5. The 0,2,3,5 collection formed on the sixth quarter-note of the measure is identical to the collection played by the contrabasses in measures 4 and 5.

Coinciding with this striking move to a C# by the cellos is the final note in a new scalar move by the harp. After leaping from E to E, once again outlining its pitch-space, it leaped down a ninth and made a stepwise descent to F, its first journey outside that pitch-space. This journey amounts to a downward shift of the E to E referential ordering, a move which seems to further advance that ordering since it has been transfered out of the part of the diatonic pitch-space which has accumulated so many particular registral associations.

This sudden dissolution of the pitch-space as the harp and strings fan out at the close of measure 7 is enhanced by the winds and brass, shifted even further upward in register, making their first appearance in the next measure.[10] This shift is balanced by several pitch and registral associations which obtain in the lower portions of the two chords, however. The B's in the trumpets which form the octave separation of the two sections of the voicing are, of course, are reiterations of the B's formed by the violas and first violins at the end of measure 7. The upper B, then passed to the flutes, forms the top voice of the second sonority in measure 8. Note that the intruder C# which entered in measure 7 has been restored to C-natural by the bass trombone at the same registral location.

In addition to their pitch and registral resonances these two chords play an interesting role in the interval-class story. The first chord (0,1,3,7) contains an equal number of possible occurrences of each interval (111111).[11] The chord which immediately follows (0,1,4,8) contains the maximum number of major thirds possible in a four-element collection

(101310).[12] It seems as if the major third interval-class, which has not played a crucial role in the opening section, is delivered in one enigmatic chord supersaturated with major thirds. The major thirds are deployed more or less adjacently, though the octave separations spread the collection over a large registral span. Thus, there is a particular resonance here, given the two 0,2,4,7 collections with their fifth and seventh adjacencies. The 0,1,3,7 collection which immediately precedes it might be considered as a momentary wash of all-interval noise which brings the 0,1,4,8 collection further into relief.

The interruption by the winds and brass is followed immediately by a single statement of the opening harp figure accompanied by a variant of the string texture which evolved in measure 7. Its unexpected metric placement makes the harp's move seem like a reflex action, reaffirming the referential collection, and the E to E referential ordering, after the recent intrusions of C# and G#.

As if to reinforce the familiar harp figure the strings sound an 0,1,3,5 collection beneath its origin-

E, the same collection which falls out of the harp figure. This particular 0,1,3,5 collection is the same one unfolded by the second violins in measure 7. This chord is followed by another appearance of the 0,2,3,5 collection which figured in the preceding measure, and generated by the contrabasses' line in measure 5. At the end of the harp figure the strings land on a slight variant of the second 0,2,4,7 sonority. This variant makes yet another direct surface connection between the two 0,2,4,7 sonorities. The previous occurrence of this particular collection was characterized by two vertically adjacent sevenths, while this representation of the collection features two adjacent fifths as in the case of the original 0,2,4,7 sonority. Also present is the resonant E-G dyad formed by the outer voices of all three versions of the 0,2,4,7 collection.

Following an exact repetition of the wind and brass chords in measures 9 and 10 the cellos enter with an eighth-note figure. The C-E-G#-B sonority, with the low C in the bass trombone is vaguely echoed in the new string figure which begins and ends with C-based sonorities.[13] The 0,2,3,7 collection that the strings land on at the close of the eighth-note figure makes an overt pitch/registral connection to the variant 0,2,4,7 sonority in the preceding measure, restriking the C-G-D fifth structure.[14] An additional resonance of this particular 0,2,3,7 collection is that it showed up as the new collection played by the violas in measure 7.

The harp, picking up where it left off in measure 9, touches on the E at the bottom of its pitch-space and then leaps down to G as if to continue the descent which it had abandoned in measure 7. The scalar segment that the harp unfolds here is the same 0,2,3,5 collection which made its initial appearance in the contrabasses in measure 5 and reappeared vertically as part of the string texture in measure 8. Beneath the harp's quarter-note line comes a variant of the eighth-note cello figure, this time played by the entire string section. The upper-voice thirds remain intact but travel in quarter-notes coloring the harp's scalewise descent. The initial and final sonorities are slightly altered, the first containing a low D doubling and a B-C minor ninth in the inner voices, while the final sonority has its lower fifth shifted downward by an octave with a C octave doubling.

The B-C minor ninth seems to be derived from the occurrence of the other 0,1,3,6 sonority in the interior of the original eighth-note cello figure. In its place in the variant figure is the same 0,2,5 collection which occurred as a passing chord in the strings in measure 5. The octave shift at the close of the variant figure seems to be a deployment which corresponds to the registral scope of the second wind and brass chord at measure 10. The trombones which unfold three C's in octaves, the last of which falls on the final chord of the variant figure, seem to further meld the two sections together in the low register. This move might be seen as compensation for the upward registral shift which characterized entrance of the winds and brass in the opening section.

Two more occurrences of the original eighth-note cello figure set up a repetition of the harp and string moves from measure 3. The harp figure, offset metrically by its early entry in measure 12, is set against more or less the same pitch material, though the events of measures 3 through 8 are telescoped down into the space of one and one half measures. The original 0,2,4,7 collection falls against the initial E and D of the descending harp figure and is followed by the 0,2,5 and other 0,2,4,7 collections. The 0,2,5 collection falls against a C in the harp line as in measure 5 while the new 0,2,4,7 collection falls against the harp's B as it did in its initial appearance in measure 4. The 0,1,3,5 collection on the downbeats of measures 14 and 15 seem to be overt references to the initial string chord in measure 8, with the 0,1,3,5 collection at measure 14 coming beneath the harp's origin E, just as it did in measure 8.

After the characteristic leap from E down to A in measure 13, and subsequent unfolding of the lower 0,1,3,5 collection, the harp returns for a moment to the origin-E and then pushes below the pitch-space. This is followed by a leap back to the origin-E and then a stepwise descent through the original pitch-space. At the same time as it reconstructs the pitch-space it recalls the original referential ordering of the opening section which has been mitigated by the activity around the pitch-class C in measures 8 through 12.

The harp's sudden shift down to C in measure 15, marking the beginning of the final dissolution of the E to E pitch-space, might be taken as an echo of the momentary C-ness of measures 8 through 11. Accompanying the downward shift to C is the dissolution of the 0,2,4,7 collection as the strings pass through a series of more or less foreign collections after its final sounding. A touchstone through these foreign collections is the F-C dyad present in all of them. On the second and fourth half-note attack points in measure 15 the C-F fifth on the bottom of the chords seems to adumbrate the 0,2,7 collection whch sets up the closing string chords.

The 0,2,3,7 collection falling on the downbeat of measure 17 is the first familiar ground after these new collections. It can be considered in several ways. One would be its connection to the eighth-note string figures of measures 10 through 12. Another would be its two vertically adjacent fifths, F-C-G, which connect it directly to the 0,2,7 collection at the end of the previous measure, which itself resonates the two collections built on the F-C fifths prior to it. Finally, we might consider it in light of its similarity to the 0,2,4,7 collection with respect to interval content. In this light it might be some kind of shadow of that centric collection which has recently begun to loosen from its moorings.[15]

Beginning in measure 16 the harp makes its final move in the opening section, a stepwise descent from A to A which is interrupted, and thus slowed down, by three quarter rests. This stepwise descent, heretofore reserved for emphasizing the original referential ordering from E to E, seems to suggest a new priority. Or is it the real priority of the opening section?[16]

This new character given to A with a suggestion of some kind of priority is confirmed by the strings, letting the 0,2,4,7 collection, so firmly set in the opening section, drift away through the foreign collections and finally coming to rest on an A-centered chord with a rather conspicuous G and a pair of C#'s.

Could the seventh priority intimated by the deployment of the 0,2,4,7 collection here be interpeted in inversion as a major second? It seems possible since the musical surface contained a linearization of the 0,2,4,7 chord with linearly adjacent fourths in place of the vertically adjacent fifths appearing in the chord itself. If so it's killing two priorities with one stone since the pitch forming the second is a G, the continuously ambiguous pitch-class in the opening section--that is, if this ambiguity can be taken as an intimation of a priority.

The C#'s might also be representing a conjunction of pitch and interval priorities, the upper one being registrally familiar as the first chromatic intrusion in the opening section back in measure 7, and either as a representative of a major third interval priority, something that was briefly alluded to by the enigmatic wind and brass chords at measures 8 and 10.

What about the fifth priority which seemed to be carried by the now-departed 0,2,4,7 string collection? The penultimate string chord formed on the second beat of measure 17, characterized by two vertically adjacent fifths with another possible fifth present but unrealized, seems to play out that priority by its cadential placement, in direct surface relation to the final chord with all of its resonances.[17]

Notes

[1] This is the same four-element collection formed by the tenor voice in the opening four measures of the Ockeghem chanson. For purposes of comparing sets we shall follow the practice of transposing them (or inverting and transposing them if necessary) so that they all begin on C, or level 0, in an ordering in which the most number of intervals of a semitone come first, and within this the most number of intervals of two semitones, etc. Thus, the major triad will be an 0,3,7 collection, not an 0,4,7 collection since inverting that collection places the smaller of the two thirds first.

[2] See note [3] in chapter I for a definition of the term _pitch-class_.

[3] See note [3] in chapter I for a definition of the term _pitch-class_ _priority_.

[4] The question of tonal bias comes up again and again in studies of Stravinsky's music, a question aimed both at Stravinsky's own compositional practices and at the various analytic apparatuses used in looking at his music. The latter is, of course, also rampant in studies of pre-tonal compositions. The question aimed at the composer's intentions seems ultimately unanswerable and bound to produce silly analyses. The second question is rife with another set of problems. Arthur Berger writes: "A worthwhile objective is certainly an approach that would no longer use tonality as a crutch, a new branch of theory, as it were, starting from what this music itself is, rather than dwelling upon its deviation from what music was previously. (Granted we might still be ultimately obliged to come to terms with traditional schemata, since it is untenable to claim for the music in question anything like the degree of cleavage with tonality that characterized twelve-tone composition.)" (Arthur Berger, "Pitch Organization in Stravinsky," _Perspectives_ _of_ _New_ _Music_ 2/1 (Fall-Winter 1963): 11). Berger's statements, aside from creating the impression of wanting to have it both ways, seem to be symptomatic of the entire dilemma surrounding analyses of _both_ pre-

tonal and post-tonal musics. Berger's notion of a new theory might be attractive, but the statement "what this music itself is" begs the question. Could the fact that Stravinsky uses the key signature of B-flat major/G minor at the opening of Mavra suggest a tonal bias on his part, or is it merely a shorthand which happened to coincide with the particular collection that is operative here? Regardless, I am not convinced--and neither is Berger, it seems--that intersections of "traditional schemata" and newer models are as pernicious as some writers suggest (See Straus 1982a and 1982b). The problem seems to lie in the poor methodology and anemic notions of tonality which characterize much of the work in this area. For example, to go triad hunting in the Ockeghem chanson would be a poor way of taking into account what is a legitimate intersection of certain notions of consonance and dissonance and voice-leading procedures in the music of the fifteenth and eighteenth centuries. See note [8] in chapter II. Likewise, to consider the Stravinsky opening section tonal solely on the basis of its common pitch-class content with respect to the major scale would be to overlook all of its peculiarities of compositional deployment of the diatonic collection.

[5] See note [4] in chapter II for a definition of the term referential ordering.

[6] In contrast to the Ockeghem chanson we are here faced with what might be described as an orchestrational reinforcement of pitch-classes, something which by its very nature reduces the structural intensity of the interval-classes formed by this reinforcement. So far the unisons and octave are being formed by the violas, second violins, and cellos picking off an element of the harp's line rather than forming out of lines proceeding independently--the octaves at measure 10 and unison at measure 30 of the chanson are of a different character. Thus the unison and octave, as interval-classes, here suggest a less structural role than those in the chanson.

[7] See note [5] in chapter II for a definition of the term interval content. The two identical four-

element collections (0,1,3,5) formed by the harp figure at measure 3 and that of the *tutti* string chord (0,2,4,7) are similar with respect to interval content:

0,1,3,5 (121110)
0,2,4,7 (021120)

[9] This suggests a parity between the two members of interval-class 5. Interval-class 5 was, of course, the problematic interval-class in the Ockeghem chanson.

[10] Glancing ahead, the shift here by the flutes might be some kind of registral setup for their opening flourish in the next section.

[11] Only two of the 29 distinct four-element collections contain an equal distribution of interval-classes, the so-called *all-interval* *tetrachords*:

0,1,3,7 (111111)
0,1,4,6 (111111)

By including the *cycle-of-fifths* *transform* (multiplication of pitch-classes by 5 or 7 mod-12) with usual operations of transposition and inversion it is possible to reduce the number of four-element sets to 21. See Daniel Starr, "Sets, Invariance and Partitions," *Journal of Music Theory*, 22/2 (1978): 1-41.

[12] Only two of the 29 distinct four-element collections contain the maximum number of major thirds possible in a collection of this size:

0,1,4,8 (101310)
0,2,4,8 (020301)

[13] The initial vertical collection (0,1,3,6) with which the eighth-note figure begins and the vertical collection (0,2,3,6) formed on the final quarter-note of measure 7 have three pitch-classes in common and are quite similar with respect to interval content:

0,1,3,6 (112011)
0,2,3,6 (112101)

[14] This 0,2,3,7 string collection holds three pitch-classes in common with the preceding 0,2,4,7 string collection and is quite similar with respect to interval content:

0,2,3,7 (111120)
0,2,4,7 (021120)

[15] The opening section of Orpheus exhibits a strong intersection between its referential ordering, as represented by two identical 0,1,3,5 collections, and many of the key string simultaneities through common pitch-class content and concomitant similarities of interval content. The Ockeghem chanson, on the other hand, exhibits a strong intersection between its ultimate pitch-class priority and many of the cadential simultaneities. The referential ordering is not so strongly represented because of the hegemony of the unison/octave interval-class in the chanson.

[16] Arthur Berger's statement concerning the relationship between pitch-class priority and referential ordering is somewhat vague. He writes: "The referential order of intervals, on the other hand, varying independently of the referential collection, is defined by the pitch class to which priority is assigned, and this, in turn, is decided on the basis of contextual evidence" (Arthur Berger, "Pitch Organization in Stravinsky," Perspectives of New Music 2/1 (Fall-Winter 1963): 12-13). The Ockeghem chanson exhibits a strong intersection between its ultimate A pitch-class priority and its A to A referential ordering. If, on the other hand, we take the ultimate pitch-class priority of the opening section of Orpheus to be an A priority, then the referential ordering from E to E that seems to be operative through most of the section is at odds with the pitch-class priority, until the very end, that is.

[17] This collection (0,2,5,7) is quite interesting in light of fifth priority in the opening section. Its interval content (021030) is unique in

that it is the only one of the 29 distinct four-element collections that contains the maximum number possible in a collection of this size (viz., 3).

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ABSTRACT

The Diatonic Collection in Two Non-Tonal Worlds

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The essay consists of informal analyses of Johannes Ockeghem's chanson Fors Seulement (ca. 1460) and the opening section of Igor Stravinsky's ballet Orpheus (1947), two compositions which utilize the diatonic collection in non-tonal contexts. Pitch-class and interval-class priority emerges through contextual observation of the two compositions. The discussion centers on certain pitch/time constructions that seem to demand attention by their musical character and through the accumulation of other musical details that support those constructions.

Implicit in the essay is the notion that the two compositions suggest various modes of musical perception and discussion, despite the diatonic pitch material which they hold in common. The octave, for example, takes on two very different intervallic

identities within the essay, thus suggesting different ways of hearing octaves from one composition to the other.

The various modes of perception suggested by the analytical combination of the two compositions generates different modes of discussion of their deployment of the diatonic collection. For example, the accumulation of interrelationships among certain horizontal and vertical pitch collections in the Stravinsky tableau gives rise to a different set of analytic concerns than those suggested by the Ockeghem chanson, where individual intervallic identities are suggested by the contrapuntal activity of the voice lines.

Both compositions exhibit similar modes of articulation in creating a sense of tone center, particularly through registral associations. This point of convergence, a result of their common diatonic pitch material, is seen as the feature which tends to group them in a problematic class of compositions which forms at the boundaries of tonality.